

# A very rare case of ectopic intramural pregnancy after IVF-ET

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## Summary

This case report shows the successful use of early medical treatment of ectopic intramural pregnancy with ultrasound-guided laparoscopic methotrexate (Mtx) injection. A 28-year old woman, gravida 1, para 0, with a history of laparoscopic cystectomy of an endometriotic cyst of the left ovary two years ago was referred to the present clinic. The patient was treated with IVF-ET because of tubal occlusion. Transvaginal ultrasonography showed an ectopic gestational sac (GS) with presence of yolk sac and embryo with a heart-beat in the posterior uterine wall, completely surrounded by myometrium. The authors successfully treated her with US-guided injection of Mtx into the GS cavity by laparoscopic approach.

**Key words:** Intramural pregnancy; Laparoscopic approach; IVF-ET; Methotrexate.

## Introduction

Intramural pregnancy is the rarest form of ectopic pregnancy. More than 95% of ectopic pregnancies involve the fallopian tubes. Other ectopic sites of implantation are less frequent. In the literature the present authors found only 18 cases of intramural pregnancies. Intramural pregnancy refers to pregnancy implanted within the myometrium, which is completely surrounding the gestational sac (GS) with no communication to the endometrial cavity. These cases frequently are complicated by uterine rupture and hemorrhage, so early diagnosis and treatment are very important. The causes of intramural pregnancy remain unclear, however, uterine trauma and disease are considered to increase the risk of the incidence. Other predisposing risk factors include cesarean section and adenomyosis. The etiology of intramural pregnancy is unclear and may result from assisted reproductive technology and/or defective migration of an implanting pregnancy.

## Case Report

A 28-year old woman, gravida 1, para 0, was admitted for a presumed ectopic pregnancy. She had a history of laparoscopic cystectomy of an endometriotic cyst of the left ovary. During the previous operation, partial salpingectomy of the left tube was performed because of hydrosalpinx and an isthmic obstruction of the right tube was diagnosed. An IVF-ET procedure because of the bilateral tubal obstruction was performed. There was no pregnancy detected after the fresh embryo transfer (ET). One year later frozen ET (FrET) was performed. Total three embryos frozen on day 3 were thawed and transferred with cryo-survival rate 80%, 80%, and 100%. Endometrium was prepared with estrogen and progesterone with 10.3-mm thickness on the day of ET. After positive pregnancy test the patient was examined by ultrasound on day 25 after ET. Enlarged and asymmetric uterus and an ectopic GS with presence of

yolk sac were scanned in the posterior wall of the uterus. The sac was completely surrounded by myometrium (Figure 1). Because of the increasing size of the GS up to 12.0 mm and the increasing levels of hCG up to 8,466 IU/l laparoscopic procedure was performed on day 27 after ET. During laparoscopy a round thickening of the posterior uterine wall with size around 15.0 mm, suspicious for ectopic GS was detected. Under US guidance the GS was injected through the abdomen with 17G needle with two ml methotrexate (Mtx) (Figure 2). Two days after the procedure, the levels of hCG began to decrease. The patient was discharged from the unit the next day after the operation. The hCG levels were checked weekly. On day 50<sup>th</sup> after the operation, hCG was negative.

## Discussion

Intramural ectopic pregnancy refers to a GS within the myometrium without any connection with the uterine cavity and the fallopian tubes. In the literature almost all re-



Figure 1. — US image of intramural gestational sac.

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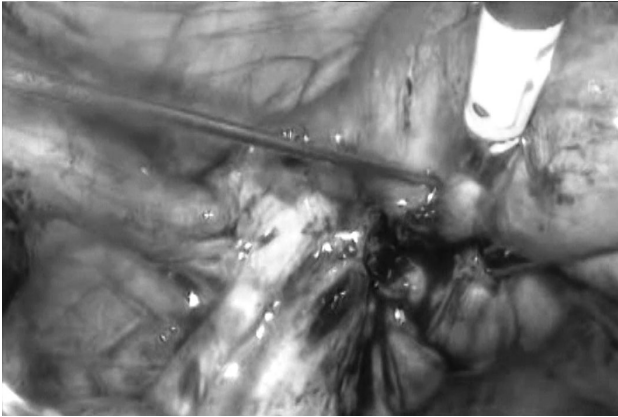


Figure 2. — Laparoscopic injection of methotrexate into the intramural gestational sac under US guidance.

ported cases were treated by laparotomy or with conservative medical treatment - Mtx and potassium chloride [1]. There are only two reported cases with laparoscopic treatment of the intramural pregnancy. The first case ended with laparoscopic hysterectomy and the second treated the condition with more conservative approach - laparoscopic resection of the gestational sac and preserving of the uterus [2]. The present is an extremely rare case of laparoscopic conservative treatment of intramural pregnancy with US-guided Mtx injected in the ectopic gestational sac.

The causes of intramural pregnancy still remain unclear because of the rareness of the condition. Since the present patient had a history of endometriosis and probable adenomyosis, the authors believe that this is the most reasonable factor for the intramural pregnancy. Deep adenomyosis has enough endometrial tissue and it can also respond to estrogen and progesterone stimulation. The microscopic sinus tract related with adenomyosis facilitates the migration of

the embryo into the uterine wall.

Intramural pregnancy is a life-threatening condition with high risk of severe hemorrhage. Its early detection allows conservative treatment and preserving the fertility of the patient.

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